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| 09/424,627      | 11/24/1999  | TSUYOSHI MAEDA       | 9319S-000109        | 8262             |

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EXAMINER

DUDEK, JAMES A

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 04/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/424,627

Applicant(s)

MAEDA ET AL.

Examiner

James A. Dudek

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,10-18 and 26-29 is/are rejected.
- 7) ☒ Claim(s) 3-9 and 19-25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other:

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over 8-292413 ("413") in view of 5,724,112 ("112").

Per claims 1 and 17, 413 teaches a liquid crystal device comprising a pair of first and second transparent substrates [21 and 22 of figure 1], a liquid crystal layer held between the first and second substrates [9], a laminate which is formed on the surface on the liquid crystal layer side of the second substrate and in which at least a transfective layer [not formed on the insider layer but still discloses as "translucent reflecting plate 35"] and a transparent electrode layer are stacked together [not stacked together but element 5 teaches a transparent electrode], an illuminating device arranged on the side opposite to the liquid crystal layer of the second substrate [38 and 37], a first polarizing plate arranged on the side opposite to the liquid crystal layer of the first substrate [31], a first phase plate arranged between the first substrate and the first polarizing plate [33], a second polarizing plate arranged between the second substrate and the illuminating device [32], and a second phase plate arranged between the second substrate and the second polarizing plate [34].

413 lacks the laminate which is formed on the surface on the liquid crystal layer side of the second substrate and in which at least a transfective layer [not formed on the insider layer but still discloses as "translucent reflecting plate 35"] and a transparent electrode layer are stacked together. However, 112 teaches stacking a semitransparent reflecting film M stacked on "a transparent conducting film". 112 teaches at column 6 line 47 to column 7, line 15 that placing the reflecting layer on the pixel would increased aperture ratio. Accordingly, it would have been obvious to one of ordinary skill at the time the invention was made to combine the semitransparent layer of 112 with the display of 413 in order to increase aperture ratio.

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Per claims 2 and 18, teaches a liquid crystal device according to Claim 1, but lacks the laminate formed of the transfective layer, a color filter, a protective layer and the transparent electrode layer in that order from the side near the second substrate. Given that it is obvious to place the transreflect layer on the transparent electrode as taught by 112, placing a color filter directly below or above is notoriously well known for at least reducing parallaxing. Accordingly, it would have been obvious to one of ordinary skill at the time the invention was made.

Regarding the protective layer, color filters are typically soft and in order to protect the color filter layer, it is notoriously well known to include a protective layer on the color filter layer. Accordingly, it would have been obvious to one of ordinary skill at the time the invention was made.

Per claims 10 and 26, 413 teaches a liquid crystal device according to Claim 1, wherein a plurality of openings are formed in the transfective layer [see the semitransparent film M].

Per claims 11 and 27, 413 in view of 112 teaches a liquid crystal device according to Claim 1, wherein a plurality of said transfective layers are formed in lines at predetermined intervals [see figures 16 and 17 of 112 and these layer are formed at the pixel regions which are formed in lines at predetermined intervals].

Per claim 12, 413 teaches a liquid crystal device according to Claim 1, but lacks the device is in a dark (black) state when it is not being driven. However, this mode of notoriously well known for typically dark background displays such as speedometers in automobiles. This normally dark mode improves power consumption. Accordingly, it would have been obvious to one of ordinary skill at the time the invention was made.

Per claim 13, 413 in view of 112 teaches a liquid crystal device according to Claim 1, wherein the transfective layer contains not less than 95% by weight of Al and has a thickness of not less than 10 nm and not more than 40 nm [layer M is formed from Al].

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Per claims 14 and 28, 413 teaches a liquid crystal device according to Claim 1, but lack a scattering plate arranged on the side opposite to the liquid crystal layer of the first substrate. However, it was notoriously well known to use diffusing plates in order to decrease the screen do effect. Accordingly, it would have been obvious to one of ordinary skill at the time the invention was made.

Per claims 15 and 29, 413 in view of 112 teaches a liquid crystal device according to Claim 1, wherein the transfective layer has recesses and protrusions [see figures 12 and 18 of 112].

Per claim 16, 413 teaches an electronic apparatus equipped with a liquid crystal device as claimed in Claim 1 [this is merely intended use and 413 may be used as a display for a watch or computer].

***Allowable Subject Matter***

Claims 3-9 and 19-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

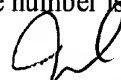
The following is a statement of reasons for the indication of allowable subject matter: Per claims 3 and 19 and their associated dependent claims, 413 in view of 112 teaches a liquid crystal device according to Claim 1, however, the prior art of record fails to teach “in the laminate, there are stacked the transfective layer, an insulating layer and the transparent electrode layer in that order from the side near the second substrate.”

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Dudek whose telephone number is 308-4782. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7721 for regular communications and 703-308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



James A. Dudek  
Primary Examiner  
Art Unit 2871

April 16, 2003